

RAW SEQUENCE LISTING

The Biotechnology Systems Branch of the Scientific and Technical Information Center (STIC) no errors detected.

Application Serial Number: 101724,598
Source: IFND
Date Processed by STIC: 09-28-2005

ENTERED



IFWO

RAW SEQUENCE LISTING

DATE: 09/28/2005

PATENT APPLICATION: US/10/724,598

TIME: 10:47:26

Input Set : N:\Cr3\RULE60\10724598.raw.txt

Output Set: N:\CRF4\09282005\J724598.raw

SEQUENCE LISTING

3 (1) GENERAL INFORMATION:

5 (i) APPLICANT: BLANCHE, FRANCIS; CAMERON, BEATRICE; CROUZET,

6 JOEL; DEBUSSCHE, LAURENT; LEVCY SCHIL, SOPHIE;

7 THIBAUT, DENIS

9 (ii) TITLE OF INVENTION: POLYPEPTIDES INVOLVED IN THE

10 BIOSYNTHESIS OF COBALAMINS AND/OR COBAMIDES, DNA

SEQUENCES

11 CODING FOR THESE POLYPEPTIDES, PREPARATION METHOD AND

THEIR

12 USE.

14 (iii) NUMBER OF SEQUENCES: 60

16 (iv) CORRESPONDENCE ADDRESS:

17 (A) ADDRESSEE: MORGAN & FINNEGAN

18 (B) STREET: 555 13TH STREET, N.W.

19 (C) CITY: WASHINGTON

20 (D) STATE: DISTRICT OF COLUMBIA

21 (E) COUNTRY: USA

22 (F) ZIP: 20004

24 (v) COMPUTER READABLE FORM:

25 (A) MEDIUM TYPE: FLOPPY DISK

26 (B) COMPUTER: IBM PC COMPATIBLE

27 (C) OPERATING SYSTEM: PC-DOS/MS-DOS

28 (D) SOFTWARE: WORDPERFECT 5.1

30 (vi) CURRENT APPLICATION DATA:

C--> 31 (A) APPLICATION NUMBER: US/10/724,598

C--> 32 (B) FILING DATE: 01-Dec-2003

33 (C) CLASSIFICATION: 435

35 (vii) PRIOR APPLICATION DATA:

W--> 36 (A) APPLICATION NUMBER: 07/916,151

37 (B) FILING DATE: 14-SEP-1992

W--> 38 (A) APPLICATION NUMBER: PCT/FR91/00054

39 (B) FILING DATE: 30-JAN-1991

41 (viii) ATTORNEY/AGENT INFORMATION:

42 (A) NAME: F. F. CALVETTI

43 (B) REGISTRATION NUMBER: 28,557

44 (C) REFERENCE/DOCKET NUMBER: 1290-7213

46 (ix) TELECOMMUNICATION INFORMATION:

47 (A) TELEPHONE: (202) 857-7887

48 (B) TELEFAX: (202) 857-7929

50 (2) INFORMATION FOR SEQ ID NO: 1:

52 (i) SEQUENCE CHARACTERISTICS:

53 (A) LENGTH: 5398 base pairs

54 (B) TYPE: Nucleic acid

55 (C) STRANDEDNESS: Double

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Input Set : N:\Crf3\RULE60\10724598.raw.txt

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56 (D) TOPOLOGY: Unknown
58 (ii) MOLECULE TYPE: cDNA
60 (iii) HYPOTHETICAL: No
C--> 62 (vi) ORIGINAL SOURCE:
63 (A) ORGANISM: Pseudomonas denitrificans
64 (B) STRAIN:
70 (C) INDIVIDUAL ISOLATE:
71 (D) DEVELOPMENTAL STAGE:
72 (E) HAPLOTYPE:
73 (F) TISSUE TYPE:
74 (G) CELL TYPE:
75 (H) CELL LINE:
76 (I) ORGANELLE:
78 (ix) FEATURE:
79 (A) NAME/KEY:
80 (B) LOCATION:
81 (C) IDENTIFICATION METHOD:
82 (D) OTHER INFORMATION:Nucleotide Sequence of the 5' to 3'
83 strand from the 5398 bp ClaI-HindIII-HindIII-HindIII
84 fragment of Pseudomonas denitrificans
87 (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 1:
90 GGGCTGCAGG TCGACTCTAG AATCGATGAA GCCTGCGATG AAGGCGGCGA CGAACAGGAA 60
92 GGCGAGCAGG TGAAGGCGA GATCTTGCAC GCGGGGACT CGAGAGGAGA GCTGTCAGGC 120
94 GGGATTTTCC GCCTTGTGTC AGAGCCCGGC GCGATTGCA AAGCCTTCTG TCGCGGTGTT 180
96 GCTGTCCATG CAGGTGTCTGA AATTGAAAAA CCGACAAAGA TTCACAGCCT TGTTCAGCT 240
98 CGCTGTCTTT CTGGATGGAG GCGCTCTCGC CCGCATGGTG CCGAAGAAGG GCTGTCTTGT 300
100 CGATACGGTA GGCGGATGAC GATCTTCTCT AAACGCGACA TGGCGATGGC GCAATCCGGT 360
102 TTGACCGGCC TTCCGCGCTC CGGTAAAAAT GAAGGATATG CGACGGCGTC CGCTTTGGCG 420
104 GACTGAAAGA GCGTCCGGTG CGGCCGACCC AGTCAGGGGG GCATCAGCCG GTGCTGTCCA 480
106 GATCGGCCCG GACGGATCGT CCCAGCCGGC GCTTCGTAA GGAGAACAAC GAAGGGAGCC 540
108 GGCCGCCGAT GCCATCGGGC CAACACTCTG CACAGACGAC GAAAGCAGGA GCCGGGCTGG 600
110 TGCTCGGGCT CGGCTGCGAG CGTCGACGC GGGCCGAAGA GGTGATCGCC CTTGCCGAGC 660
112 GTGCGCTTGC CGATGCCGGT GTTGCGCCCG GCGATCTGCG GCTGGTCGCC TCGCTCGATG 720
114 CTCGCGCCGA GGAGCCGGCG ATCCTGGCGG CCGCTCAGCA TTTCGCGGTT CCGGCCGCGT 780
116 TCTACGATGC CGCCACGCTC GAAGCCGAAG CTTCCCGGCT CGCCAACCCG TCCGAGATCG 840
118 TCTTTGCCTA CACGGTTGT CATGGCGTTG CCGAGGGTGC AGCGCTCGTC GGCGCCGGTC 900
120 GCGAAGCCGT GCTGATTGTG CAGAAGATCG TCTCCGCCA TCGACGGCC GCACTTGCCG 960
122 GGCCGGCGAC CTTGCGCGCC GAAAAGCGCA TCCAGGCGGC GGAGGCTGTC TGATGCATTC 1020
124 TTATGTTGTT GAATTGAATC AATCTTTTGC CCGGGGTTTC TCTCAAGTGG AATCCGGTTC 1080
126 TTTAGAGAGC GCGTCAGGCG TGCCGTTGGG TGGCGCCGAA ATACAGGTGG GACAGCACGC 1140
128 ATGATCGACG ACCTCTTTGC CGGATTGCCG GCGCTCGAAA AAGGTTGCGT CTGGCTGGTC 1200
130 GGCGCCGGCC CCGGCGATCC CGGCCTGTTG ACGCTGCATG CGGCCAATGC GCTGCGCCAG 1260
132 GCGGATGTGA TCGTGCATGA TGCGCTGGTC AACGAGGATT GCCTGAAGCT CGCGCGGCCG 1320
138 GGCGCCGTGC TGGAGTTTGC GGGCAAGCGT GGCGGCAAGC CGTCGCCGAA GCAGCGCGAC 1380
140 ATCTCGCTTC GCCTCGTCGA ACTCGCGCGC GCCGGCAACC GGGTGCTGCG CCTCAAAGGC 1440
142 GGCGATCCCT TCGTCTTCGG TCGCGGTGGC GAGGAGGCGC TGACGCTGGT CGAACACCAG 1500
144 GTGCCGTTCC GAATCGTGCC CGGCATCACC GCCGGTATCG GCGGGCTTGC CTATGCCGGC 1560
146 ATTCCCGTGA CCCATCGCGA GGTCAACCAC GCGGTCACTT TCCTGACTGG CCATGATTCC 1620
148 TCCGGCCTGG TGCCGGATCG CATCAACTGG CAGGGCATCG CCAGCGGCTC GCCTGTCATC 1680

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150	GTCATGTACA	TGGCGATGAA	ACATATCGGC	GCGATCACCG	CCAACCTCAT	TGCCGGCGGC	1740
152	CGCTCGCCGG	ACGAACCGGT	CGCCTTCGTC	TGCAACGCCG	CGACGCCGCA	GCAGGCGGTG	1800
154	CTGGAAACGA	CGCTTGCGCG	TGCAGAGGCC	GATGTTGCGG	CGGCAGGGCT	GGAGCCGCCG	1860
156	GCGATCGTCG	TCGTCGGCGA	GGTGGTGCGG	CTGCGCGCAG	CGCTCGACTG	GATCGGCGCG	1920
158	CTGGACGGGC	GCAAGCTTGC	CGCCGACCCG	TTGCGCAATC	GCATTCTCAG	GAACCCGGCA	1980
160	TGAGCGGATT	GCTGATTGCC	GCACCCGCGT	CCGGCTCCGG	CAAGACGACG	GTGACGCTCG	2040
162	GGCTGATGCG	CGCCCTGAAG	AGGCGCGCGG	TGGCGATCGC	GCCCGGCAAG	GCGGGGCCGG	2100
164	ACTATATCGA	TCCCGCTTTC	CACGCGGCAG	CGACCGGCGA	GCCCTGCTTC	AACTACGACC	2160
166	CCTGGGCGAT	GCGCCCGGAA	CTGCTGCTTG	CCAATGCGTC	GCATGTGGCC	TCCGGCGGGC	2220
168	GCACATTGAT	CGTCGAGGCG	ATGATGGGAC	TGCATGACGG	TGCTGCCGAC	GGCTCGGGAA	2280
170	CGCCAGCGGA	CCTCGCCGCG	ACGCTGAACC	TTGCGGTCAT	TCTGGTGGTC	GATTGCGCCC	2340
172	GCATGTCCCA	GTCGGTTGCC	GCCCTCGTGC	GCGGCTATGC	GGATCATCGC	GACGATATCC	2400
174	GGGTGGTTGG	CGTCATCCTC	AACAAGGTCG	GCAGCGATCG	GCATGAAATG	ATGCTGCGCG	2460
176	ATGCGCTCGG	CAAGGTGCGC	ATGCCTGTCT	TCGGCGTGCT	CCGGCAGGAC	AGCGCATTGC	2520
178	AACTGCCGGA	GCGCCATCTC	GGGCTCGTGC	AGGCGGGCGA	ACACTCAGCG	CTTGAGGGCT	2580
180	TCATCGAGGC	GGCGGCCGCG	CGGGTCGAGG	CTGCCCTGCG	TCTCGACGCC	ATCCGCTGA	2640
182	TCGCGACGAT	TTTCCCGCAG	GTGCCCGCGG	CGGCCGATGC	CGAGCGTTTG	CGGCCGCTCG	2700
184	GTCAGCGCAT	CGCGGTCGCG	CGCGATATCG	CCTTTGCCTT	CTGCTACGAG	CACCTGCTTT	2760
186	ACGGCTGGCG	GCAAGGCGGC	GCGGAGATTT	CCTTCTTCTC	GCCGCTCGCC	GACGAGGGGC	2820
188	CGGATGCGGC	AGCCGATGCC	GTCTATCTTC	CGGGGGGTTA	TCCGGAGCTG	CATGCGGGGC	2880
190	AGCTGAGCGC	CGCCGCCCGA	TTCCGTTCCG	GCATGCATTC	CGCGGCGGAA	CGCGGCGCCC	2940
192	GCATCTTCGG	CGAGTGCGGC	GGCTATATGG	TGCTCGGCGA	AGGGCTTGTC	GCTGCCGATG	3000
194	GCACACGCTA	CGACATGCTC	GGCCTGCTGC	CGCTCGTAAC	CAGTTTTCGC	GAGCGCAGGC	3060
196	GGCACCTCGG	CTATCGCCGC	GTCGTGCCTG	TCGACAACGC	CTTCTTCGAT	GGACCCATGA	3120
198	CGGCGCACGA	ATTCCACTAT	GCGACCATCG	TCGCCGAAGG	GGCGGCCGAT	CGGCTGTTTG	3180
200	CGGTCAGCGA	CGCCGCCCGG	GAGGATCTCG	GCCAGGCGGG	CCTCCGGCGC	GGCCCTGTCT	3240
206	CCGGTTCCTT	CATGCATCTG	ATCGACGTCG	CAGGTGCTGC	ATGAGCGCAC	CGATCGTTCA	3300
208	TGGTGGCGGC	ATCACCGAGG	CCGCAGCGCG	CTATGGCGGC	CGGCCTGAAG	ACTGGCTCGA	3360
210	TCTGTGACCC	GGCATCAATC	CATGCCCCGT	CGCCTTGCCC	GCGGTCCCTG	AGCGCGCCTG	3420
212	GCACCGGCTG	CCGGATCGGC	AGACGGTAGA	TGATGCGCGG	AGCGCCGCCG	CCGACTACTA	3480
214	CCGACCAAC	GGCGTGCTGC	CTTTGCCGGT	GCCGGGCACC	CAGTCGGTGA	TCCAGCTCCT	3540
216	GCCAGTCTTT	GCTCCGGCCA	ACAGGCACGT	CGCGATTTTC	GGGCCGACCT	ATGGCGAGTA	3600
218	TGCCCCGCTG	CTTGAAGCGG	CCGGCTTTGC	TGTCGATCGC	CGGACGGATG	GTCGCGGATG	3660
220	CACGGCCGAA	CATGGGCTTG	TCATCGTCTG	CAACCCCAAC	AACCCGACCG	GCCGCGCCTT	3720
222	GGCGCCGGCG	GAGCTTCTGG	CGATCGCCGC	AAGGCAGAAG	GCGAGCGGCG	GA CTGCTGCT	3780
224	GGTCGATGAG	GCCTTCGGCG	ATCTTGAGCC	GCAACTGAGT	GTCGCTGGTC	ACGCGTCAGG	3840
226	GCAAGGCAAC	CTCATCGTCT	TCCGCTCCTT	CGGCAAGTTC	TTGCGCCTTG	CGGGCCTGCG	3900
228	CCTCGGCTTC	GTCGTTGCGA	CCGAGCCAGT	GCTTGATATC	TTTGCCGATT	GGCTCGGTCC	3960
230	CTGGGCTGTC	TCCGGCCCGG	CGTTGACGAT	CTCGAAAGCG	CTGATGCAGG	GCGATACGAA	4020
232	GGCGATCGCG	GCGGGCATCC	TCGAGCGTCG	CGCCGGCCTC	GATGCGGCTC	TCGATGGGGC	4080
234	AGGGCTCAAC	CGTATCGGCG	GCACGGGGCT	ATTCTGTGCTG	GTCGAGCATC	CCAGGGCAGC	4140
236	TCTGCTGCAG	GAGCGGCTCT	GCGAGGCCCA	TATTCTCACG	CGCAAGTTTC	ACTATGCCCC	4200
238	GACCTGGCTC	AGGGTCGGTC	TTGCGCCTGA	CGCGGCTGGT	GACCGACGGC	TGGCGGACGC	4260
240	GCTTGCCCCG	ATGGAGCTCT	GAGGTGTGCG	AGACGATCCT	GCTCATTCTC	GCGCTGGCGC	4320
242	TGGTGATCGA	CCGCGTTGTC	GGCGATCCGG	ACTGGCTCTG	GGCGCGCGTG	CCGCATCCGG	4380
244	TCGTGTTTTT	CGGCAAGGCC	ATCGGCTTTT	TCGACGCGCG	GCTGAACCGG	GAGGACCTCG	4440
246	AGGATAGCGC	GCGCAAATTT	CGTGGCGTCG	TCGCGATCCT	TTTGTGCTT	GGCATCAGCG	4500
248	CCTGGTTTCG	CCATCTGCTG	CATCGCCTGT	TCGCCGTCCT	CGGACCGCTC	GGCTTTCTGC	4560
250	TCGAGGCGGT	TCTGGTTCGG	GTCTTCCTGG	CACAGAAGAG	CCTCGCCGAT	CACGTGCGTC	4620

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252 GCGTGGCCGG GGGCTTGCGA CAGGGCGGGC TGGAAAGCGG GCGTGCCGCC GTGTCGATGA      4680
254 TCGTTGGTCG CGATCCAAAG ACGCTCGACG AGCCGGCGGT CTGCCGTGCC GCGATCGAAA      4740
256 GCCTTGCCGA GAATTTCTCC GACGGCGTCG TGGCGCCGGC CTTCTGGTAC GCGGTTGCCG      4800
258 GCCTGCCGGG GCTTCTTGCC TACAAGATGC TGAACACCGC CGATTTCGATG ATCGGCCACA      4860
260 AGTCGCCGAA ATATCTGCAC TTCGGCTGGG CCTCGGCCCG ACTCGACGAT CTCGCCAACC      4920
262 TGCCGGCAGC GAGGCTCTCG ATCCTTTTGA TCTCAGCCGG TCGCTGATC CATCGTGGCG      4980
264 CCAGCGCCGC CAAGGATGCG CTGACCGTGG CCCTTCGCGA CCATGGCCTG CACCGCTCGC      5040
266 CGAACTCCGG CTGGCCGGAA GCGGCCATGG CCGGCGCGCT CGATCTGCAG CTTGCCGGTC      5100
268 CGCGGATCTA TGGCGGCGTC AAGGTCAGCG AACCTATGAT CAACGGTCCG GGCCGAGCGG      5160
274 TTGCAACAAG CGAAGACATC GACGCCGGTA TTGCTGTATT TTATGGCGCC TGTACGGTCA      5220
276 TGGCCGGGTT TGTTCTTGCA ATCGCAATGA TTTGATCGCG GAAGTTGACC TTCGCATTAA      5280
278 GACTCTGCTT TCCATATGTA TTAAGATCGT ATCATATTCG ATCAGTTATT CTCCTGGAAC      5340
280 GTTTGGTTCC ACCGGTACGT GTTCGTCTTC CCGGAGAGAG AAGCATGCGC AAAAGCTT      5398

```

283 (2) INFORMATION FOR SEQ ID NO: 2:

285 (i) SEQUENCE CHARACTERISTICS:

286 (A) LENGTH: 8753 base pairs

287 (B) TYPE: Nucleic Acid

288 (C) STRANDEDNESS: Double

289 (D) TOPOLOGY: Unknown

291 (ii) MOLECULE TYPE: cDNA

293 (iii) HYPOTHETICAL: No

C--> 295 (vi) ORIGINAL SOURCE:

296 (A) ORGANISM: Pseudomonas denitrificans

297 (B) STRAIN:

298 (C) INDIVIDUAL ISOLATE:

299 (D) DEVELOPMENTAL STAGE:

300 (E) HAPLOTYPE:

301 (F) TISSUE TYPE:

302 (G) CELL TYPE:

303 (H) CELL LINE:

304 (I) ORGANELLE:

306 (ix) FEATURE:

307 (A) NAME/KEY:

308 (B) LOCATION:

309 (C) IDENTIFICATION METHOD:

310 (D) OTHER INFORMATION: Nucleotide Sequence of the 5' to 3'

311 strand from the 8753 bp EcoRII fragment of Pseudomonas

312 denitrificans

315 (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 2:

```

318 GAATTCGCCA GCGCTACAT GGCTGACCTC AAGCAGTTCC TCGTGGCCCA GAAGAACGAG      60
320 GGCCGGCAGA TTTTCCCTCG CGGGCCTGAG TATTTTCGCG CGCTCGACCT GACGCCGCTC      120
322 GACAAGGTGC GCGTGGTCAT TCTCGGCCAG GATCCCTATC ACGGTGACGG CCAGCGGCAT      180
324 GGGCTCTGCT TCAGCGTTTCG CCCCGGTGTC CGGACGCCGC CGTCGCTGGT CAACATCTAC      240
326 AAGGAACTGA ATACCGATCT CGGTATTCCG CCGGCGCGTC ACGGTTTTCT CGAAAGCTGG      300
328 GCAAGGCAGG GCGTGCTGCT TTTGAACAGC GTGCTGACGG TAGAGCGCGG GAACGTGCGT      360
330 CACACCAGGG TCACGGTTGG GAAAAGTTCA CGGATGCGAT CATCCGTGCG GTCAACGAGG      420
332 CCGAGCATCC CGTCGTCTTC ATGCTTTGGG GTCCTATGCG GCAGAAGAAG GCGGCCTTCG      480
334 TCGACCGCTC GCGCCATCTT GTCCTGAGGG CACCACATCC GTCGCCGCTC TCAGCCCATT      540
336 CCGGCTTTCT CGGCTGCCGG CATTTTTCCT AGGCCAATGC CTTCTCTGAA AGCAAAGGCT      600

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342	TCGATCCGAT	CGACTGGCGG	CTGCCGAAAA	ATCCGGCTGC	GGACATCAAC	TGAAGGCTTG	660
344	GCGCGAATGA	CGGCTTTGTC	GTCGCCCTGA	GGTCTTGCTT	TGGCGGCGGC	GATCCGCCTA	720
346	AGACGCCCCA	ACGAAATGGC	GGAGGCGGGC	ATGCGCAAAA	TTCTGATCAT	CGGCATCGGT	780
348	TCGGGCAATC	CCGAACACAT	GACCGTGCAG	GCGATCAACG	CGCTGAACTG	CGCCGACGTG	840
350	CTCTTTATCC	CGACCAAGGG	AGCGAAGAAG	ACCGAGCTTG	CCGAAGTGCG	CCGCGACATC	900
352	TGCGCCCGCT	ACGTCACGCG	CAAGGACAGC	CGCACCGTCG	AGTTCGCGGT	GCCCGTGCGG	960
354	CGCACCGAAG	GCGTCAGCTA	TGACGGCAGC	GTCGATGACT	GGCACGCCCC	GATCGCTGGG	1020
356	ATTTACGAAG	CGCTTCTATC	GAAGGAGTTG	GGCGAAGAGG	GAAGTGCGCG	GTTTCTCGTC	1080
358	TGGGGCGACC	CGATGCTCTA	TGACAGCACC	ATTCGCATCG	TCGAGCGGGT	CAAGGCACGC	1140
360	GGTGAGGTCG	CCTTCGCCTA	CGACGTCATT	CCCGGGATCA	CCAGTCTGCA	GGCGCTTTGC	1200
362	GCCAGCCACC	GCATTCCGCT	GAACCTCGTC	GGCAAGCCGG	TGGAGATCAC	CACGGGGCGT	1260
364	CGGCTGCACG	AAAGCTTTCC	CGAGAAGAGC	CAGACCTCGG	TCGTCATGCT	CGATGGCGAA	1320
366	CAGGCGTTTC	AGCGGGTCGA	GGACCCGGAG	GCGGAGATCT	ATTGGGGCGC	CTATCTCGGC	1380
368	ACGCGGGATG	AGATCGTCAT	TTCCGGCCGC	GTGGCTGAGG	TGAAGGACCG	GATCCTTGAA	1440
370	ACGCGGGCGG	CGGCGCGCGC	GAAGATGGGA	TGGATCATGG	ACATCTATCT	CCTGCGCAAG	1500
372	GGCGCCGACT	TCGACGAGTG	ACGGGGAGGG	CCGATCTGCG	TCGTGTTTGA	TCTCACTCAA	1560
374	GGTTTGCGGC	TGTGTTATAG	CGCTTTAAGA	GGCTTCTTCA	GGGAGGAGAA	CCTCAAGTGA	1620
376	TGACGGATTT	GATGACCAGC	TGCGCCCTTC	CATTGACCGG	AGATGCCGGC	ACCGTCGCTT	1680
378	CGATGCGCCG	CGGCGCCTGC	CCGTCTTTGG	CAGAGCCGAT	GCAGACCGGC	GACGGCCTGC	1740
380	TCGTGAGGGT	GAGGCCAACG	GATGACAGCC	TGACGCTGCC	GAAGGTCATT	GCCCTTGCCA	1800
382	CGGCTGCCGA	GCGCTTCGGC	AATGGCATCA	TCGAGATTAC	CGCGCGCGGA	AACCTGCAGC	1860
384	TTTCGCGCCT	GAGCGCGGCT	TCGGTGCCAA	GGCTGGCGCA	GGCGATCGGC	GATGCGGAGA	1920
386	TCGCCATTGC	CGAGGGGCTC	GCGATCGAGG	TGCCGCCCTT	GGCCGGCATC	GACCCGGACG	1980
388	AGATCGCCGA	TCCGCGGCCG	ATTGCCACTG	AGCTTCGTGA	AGCGTTGGAT	GTGCGCCAGG	2040
390	TGCCGTTGAA	GCTTGACACC	AAATTATCCG	TCGTATCGCA	TAGCGGTGGC	CGGTTTGGTC	2100
392	TCGGCGCTGT	CGTCGCCGAC	ATTGCGCTTC	AGGCGGTTTC	GACTGTGCGG	GGGGTGGCCT	2160
394	GGGTGCTGTC	GCTTGGCGGC	ACGTCAACGA	AGGCATCGAG	CGTCGGGACG	TTGGCCGGCA	2220
396	ACGCGGTGCT	GCCGGCCCTG	ATCACCATTG	TCGAGAAACT	GGCGAGCCTG	GGCACGACGA	2280
398	TGCGCGGGCG	CGATCTGGAC	CCGTGCGAAA	TCCGCGCGCT	CTGTGCTGCT	GAGACATCGT	2340
400	CCGAACGCCC	GGCCGCTCCG	CGTTGCGCCG	CAATACCCGG	CATTTCATGCG	CTGGGTAAACG	2400
402	CCGACACCGT	TCTCGGCCTC	GGTCTGGCCT	TTGCTCAGGT	GGAGGCCGCC	GCGCTGGCAT	2460
404	CCTACCTGCA	TCAGGTCCAG	GCGCTTGCGG	CCAATGCGAT	CCGGCTTGCG	CCCGGGCAGC	2520
410	CTTCTTTCGT	CTCGGCCCTT	TGCCCCGAGA	CGCGGCTGCT	GGCGCAGAGC	CTGGCAGCGT	2580
412	CACACGGTTT	TCGCATTGCC	GAGCAGGATC	CGCGCAATGC	GATCGCCACC	TGCGCCGGCA	2640
414	GCAAGGGTTG	CGCCTCGGCG	TGGATGGAAA	CCAAGGGCAT	GGCCGAGCGC	CTCGTCGAGA	2700
416	CGGCGCCGGA	ATTGCTCGAC	GGGTGCTCA	CCGTGCATCT	CTCCGGCTGC	GCCAAGGGCT	2760
418	GCGCCCGGCC	GAAGCCGTCC	GAAGTACGCG	TTGTGCGTGC	GCCATCAGGA	TACGGGCTTG	2820
420	TCGTAAATGG	GGCTGCCAAT	GGCTTGCCAA	GCGCCTACAC	CGATGAGAAT	GGAATGGGAT	2880
422	CCGCCCTTGC	CCGGCTCGGC	CGGCTGGTGC	GGCAAAACAA	AGACGCTGGC	GAATCGGCGC	2940
424	AGTCCTGTCT	TACACGGCTC	GGAGCTGCGC	GCGTCTCGGC	AGCGTTCGAA	CAGGGATAGA	3000
426	CATGCCTGAG	TATGATTACA	TTGCGGATGG	CAACGCCATC	TACGAGCGTT	CCTTCGCCAT	3060
428	CATCCGCGCC	GAGGCCGATC	TGTCGCGCTT	CTCCGAAGAG	GAAGCGGATC	TGGCTGTGCG	3120
430	CATGGTGCAC	GCCTGCGGTT	CCGTGCGAGG	GACCAGGCAG	TTCTGTGTTT	CTCCCGATTT	3180
432	CGTAAGCTCG	GCCCGTGCGG	CGCTGAAAGC	CGGTGCGCCG	ATCCTCTGCG	ATGCCGAGAT	3240
434	GGTTGCGCAC	GGTGTCACCC	GCGCCCGTCT	GCCGGCCGGC	AACGAGGTGA	TCTGCACGCT	3300
436	GCGCGATCCT	CGCACGCCCC	CACTTGCGGC	CGAGATCGGC	AACACCCGCT	CCGCCGAGC	3360
438	CCTGAAGCTC	TGGAGCGAGC	GGCTGGCCGG	TTGGTGGTGC	GCGATCGGCA	ACGCGCCGAC	3420
440	GGCGTTGTTC	TTCTCTTTGG	AAATGCTGCG	CGACGGCGCG	CCGAAGCCGG	CGGCAATCCT	3480
442	CGGCATGCCC	GTCGGTTTCG	TCGGTGCGGC	GGAATCGAAG	GATGCGCTGG	CCGAGAACTC	3540

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Invalid Line Length:

The rules require that a line not exceed 72 characters in length. This includes spaces.

Seq#:1; Line(s) 283
Seq#:2; Line(s) 631
Seq#:3; Line(s) 699
Seq#:4; Line(s) 774
Seq#:5; Line(s) 856
Seq#:6; Line(s) 952
Seq#:7; Line(s) 1023
Seq#:8; Line(s) 1105
Seq#:9; Line(s) 1177
Seq#:10; Line(s) 1258
Seq#:11; Line(s) 1311
Seq#:12; Line(s) 1370
Seq#:13; Line(s) 1436
Seq#:14; Line(s) 1509
Seq#:15; Line(s) 1593
Seq#:16; Line(s) 1694
Seq#:17; Line(s) 1750
Seq#:18; Line(s) 1815
Seq#:19; Line(s) 1881
Seq#:20; Line(s) 1949
Seq#:21; Line(s) 2012
Seq#:22; Line(s) 2081
Seq#:23; Line(s) 2147
Seq#:24; Line(s) 2221
Seq#:25; Line(s) 2305
Seq#:26; Line(s) 2396
Seq#:27; Line(s) 2460
Seq#:28; Line(s) 2531
Seq#:29; Line(s) 2739
Seq#:30; Line(s) 2918
Seq#:31; Line(s) 2991
Seq#:32; Line(s) 3071
Seq#:33; Line(s) 3173
Seq#:34; Line(s) 3298
Seq#:35; Line(s) 3349
Seq#:36; Line(s) 3399
Seq#:37; Line(s) 3470
Seq#:38; Line(s) 3552
Seq#:39; Line(s) 3621
Seq#:40; Line(s) 3698
Seq#:41; Line(s) 4207
Seq#:42; Line(s) 4295
Seq#:43; Line(s) 4401

RAW SEQUENCE LISTING ERROR SUMMARY

DATE: 09/28/2005

PATENT APPLICATION: US/10/724,598

TIME: 10:47:27

Input Set : N:\CrF3\RULE60\10724598.raw.txt

Output Set: N:\CRF4\09282005\J724598.raw

Seq#:44; Line(s) 4454
Seq#:45; Line(s) 4515
Seq#:46; Line(s) 4590
Seq#:47; Line(s) 4679
Seq#:48; Line(s) 4848
Seq#:49; Line(s) 5058
Seq#:50; Line(s) 5118
Seq#:51; Line(s) 5185
Seq#:52; Line(s) 5257

VERIFICATION SUMMARY

PATENT APPLICATION: US/10/724,598

DATE: 09/28/2005

TIME: 10:47:27

Input Set : N:\CrF3\RULE60\10724598.raw.txt

Output Set: N:\CRF4\09282005\J724598.raw

L:31 M:220 C: Keyword misspelled or invalid format, [(A) APPLICATION NUMBER:]
L:32 M:220 C: Keyword misspelled or invalid format, [(B) FILING DATE:]
L:38 M:238 W: Alpha Fields not Ordered, Reordered [(A) APPLICATION NUMBER:] of (1) (vii)
L:62 M:220 C: Keyword misspelled or invalid format, [(vi) ORIGINAL SOURCE:]
L:295 M:220 C: Keyword misspelled or invalid format, [(vi) ORIGINAL SOURCE:]
L:643 M:220 C: Keyword misspelled or invalid format, [(vi) ORIGINAL SOURCE:]
L:711 M:220 C: Keyword misspelled or invalid format, [(vi) ORIGINAL SOURCE:]
L:786 M:220 C: Keyword misspelled or invalid format, [(vi) ORIGINAL SOURCE:]
L:868 M:220 C: Keyword misspelled or invalid format, [(vi) ORIGINAL SOURCE:]
L:964 M:220 C: Keyword misspelled or invalid format, [(vi) ORIGINAL SOURCE:]
L:1035 M:220 C: Keyword misspelled or invalid format, [(vi) ORIGINAL SOURCE:]
L:1117 M:220 C: Keyword misspelled or invalid format, [(vi) ORIGINAL SOURCE:]
L:1189 M:220 C: Keyword misspelled or invalid format, [(vi) ORIGINAL SOURCE:]
L:1270 M:220 C: Keyword misspelled or invalid format, [(vi) ORIGINAL SOURCE:]
L:1323 M:220 C: Keyword misspelled or invalid format, [(vi) ORIGINAL SOURCE:]
L:1382 M:220 C: Keyword misspelled or invalid format, [(vi) ORIGINAL SOURCE:]
L:1448 M:220 C: Keyword misspelled or invalid format, [(vi) ORIGINAL SOURCE:]
L:1521 M:220 C: Keyword misspelled or invalid format, [(vi) ORIGINAL SOURCE:]
L:1605 M:220 C: Keyword misspelled or invalid format, [(vi) ORIGINAL SOURCE:]
L:1706 M:220 C: Keyword misspelled or invalid format, [(vi) ORIGINAL SOURCE:]
L:1766 M:220 C: Keyword misspelled or invalid format, [(vi) ORIGINAL SOURCE:]
L:1832 M:220 C: Keyword misspelled or invalid format, [(vi) ORIGINAL SOURCE:]
L:1897 M:220 C: Keyword misspelled or invalid format, [(vi) ORIGINAL SOURCE:]
L:1965 M:220 C: Keyword misspelled or invalid format, [(vi) ORIGINAL SOURCE:]
L:2024 M:220 C: Keyword misspelled or invalid format, [(vi) ORIGINAL SOURCE:]
L:2093 M:220 C: Keyword misspelled or invalid format, [(vi) ORIGINAL SOURCE:]
L:2159 M:220 C: Keyword misspelled or invalid format, [(vi) ORIGINAL SOURCE:]
L:2237 M:220 C: Keyword misspelled or invalid format, [(vi) ORIGINAL SOURCE:]
L:2316 M:220 C: Keyword misspelled or invalid format, [(vi) ORIGINAL SOURCE:]
L:2408 M:220 C: Keyword misspelled or invalid format, [(vi) ORIGINAL SOURCE:]
L:2472 M:220 C: Keyword misspelled or invalid format, [(vi) ORIGINAL SOURCE:]
L:2543 M:220 C: Keyword misspelled or invalid format, [(vi) ORIGINAL SOURCE:]
L:2751 M:220 C: Keyword misspelled or invalid format, [(vi) ORIGINAL SOURCE:]
L:2930 M:220 C: Keyword misspelled or invalid format, [(vi) ORIGINAL SOURCE:]
L:3002 M:220 C: Keyword misspelled or invalid format, [(vi) ORIGINAL SOURCE:]
L:3083 M:220 C: Keyword misspelled or invalid format, [(vi) ORIGINAL SOURCE:]
L:3190 M:220 C: Keyword misspelled or invalid format, [(vi) ORIGINAL SOURCE:]
L:3310 M:220 C: Keyword misspelled or invalid format, [(vi) ORIGINAL SOURCE:]
L:3361 M:220 C: Keyword misspelled or invalid format, [(vi) ORIGINAL SOURCE:]
L:3410 M:220 C: Keyword misspelled or invalid format, [(vi) ORIGINAL SOURCE:]
L:3482 M:220 C: Keyword misspelled or invalid format, [(vi) ORIGINAL SOURCE:]
L:3564 M:220 C: Keyword misspelled or invalid format, [(vi) ORIGINAL SOURCE:]
L:3633 M:220 C: Keyword misspelled or invalid format, [(vi) ORIGINAL SOURCE:]
L:3710 M:220 C: Keyword misspelled or invalid format, [(vi) ORIGINAL SOURCE:]
L:4219 M:220 C: Keyword misspelled or invalid format, [(vi) ORIGINAL SOURCE:]
L:4307 M:220 C: Keyword misspelled or invalid format, [(vi) ORIGINAL SOURCE:]
L:4413 M:220 C: Keyword misspelled or invalid format, [(vi) ORIGINAL SOURCE:]
L:4471 M:220 C: Keyword misspelled or invalid format, [(vi) ORIGINAL SOURCE:]

VERIFICATION SUMMARYPATENT APPLICATION: **US/10/724,598**

DATE: 09/28/2005

TIME: 10:47:27

Input Set : **N:\Crf3\RULE60\10724598.raw.txt**Output Set: **N:\CRF4\09282005\J724598.raw**

L:4532 M:220 C: Keyword misspelled or invalid format, [(vi) ORIGINAL SOURCE:]
L:4607 M:220 C: Keyword misspelled or invalid format, [(vi) ORIGINAL SOURCE:]
L:4691 M:220 C: Keyword misspelled or invalid format, [(vi) ORIGINAL SOURCE:]
L:4860 M:220 C: Keyword misspelled or invalid format, [(vi) ORIGINAL SOURCE:]
L:5467 M:246 W: Invalid value of Alpha Sequence Header Field, [MOLECULE TYPE:], SeqNo=56
L:5494 M:246 W: Invalid value of Alpha Sequence Header Field, [MOLECULE TYPE:], SeqNo=57
L:5517 M:246 W: Invalid value of Alpha Sequence Header Field, [MOLECULE TYPE:], SeqNo=58
L:5540 M:246 W: Invalid value of Alpha Sequence Header Field, [MOLECULE TYPE:], SeqNo=59
L:5567 M:246 W: Invalid value of Alpha Sequence Header Field, [MOLECULE TYPE:], SeqNo=60